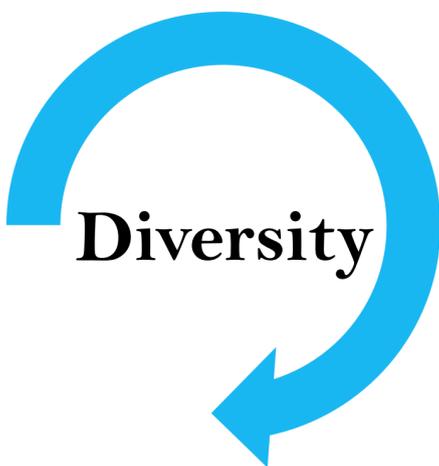


BACKGROUND

PHAR 512 is part of a six-semester sequence focused on hands-on-practice and attainment of skills necessary in pharmacy practice. The PHAR 512 lab consists of six weeks focused on introductory Drug Information (DI) skills taught in the first-year fall semester. The first-year students are specifically taught how to utilize tertiary drug databases to answer commonly asked questions in pharmacy settings such as use of drugs in pregnancy and lactation, identifying tablets based on markings, uses of natural products, and checking drug-drug interactions. Additional concepts covered in the course include drug development process and biomedical research. PHAR 512 also transitioned to a hybrid setting in which labs were in person or conducted via Zoom in Fall 2020. Inclusive teaching practices were important in this course especially during COVID-19 to ensure all students had the opportunity to learn the content.

IMPLEMENTATION

There were several modifications made to the assignments and activities in this course as follows:



Mystery in the Forensic Lab Activity

Students to utilize knowledge obtained from concurrent P1 courses to determine a fictional patient's cause of death:

- Pharmacology
- Pharmacy calculations
- Medicinal biochemistry
- DEI resources and databases

The case was updated to feature an African-American patient with disease states that were not typical of the African-American population, so that treatment can be based on the disease state rather than the race of the patient.

Drug Development Lab

Students completed an assignment on pre-clinical and clinical drug development stages. The students also answered DI questions over investigational drugs for COVID-19 in the lab session. Breakout room with small groups allowed for students who were uncomfortable with speaking up in a large group to get the help they need.



Journal Article Presentations

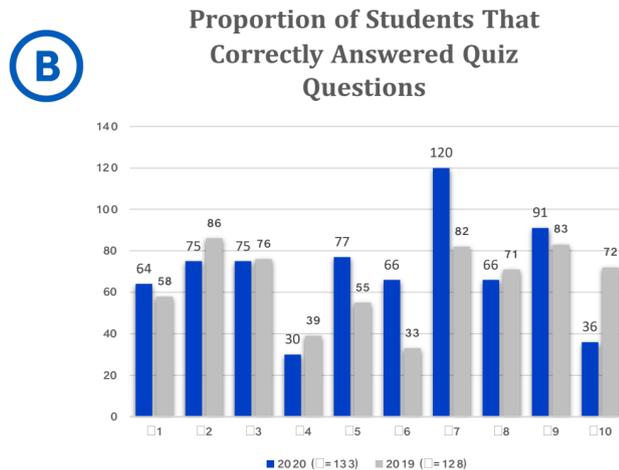
Students were required to present a pre-clinical and clinical, or practice-based research article over COVID-19 (remdesivir, mRNA, and hydroxychloroquine) at the end of the semester. As part of the presentation, students were required to discuss the relevancy of the journal article to the concepts of basic science and/or pharmacy practice. Students were challenged to think about equity and inclusion of the participants enrolled in the clinical studies, as well as how lack of diversity impacts treatment for COVID-19.

STUDENT LEARNING

- Student performance for the Mystery in the Forensic Lab activity, drug development assignments, and the journal article presentations were compared to the 2019 class (Figure A). Overall, the students performed similarly to those from the 2019 class.
- Student performance on the summative DI quiz was also compared to the 2019 class (Figure B). The students in Fall 2020 performed similarly to students in 2019 on 7/10 questions, better on 2/10 questions, and worse on 1/10 question. The structure and delivery methods of the assessments may have contributed to the higher scores on the quiz questions. Based on the data, student learning during the pandemic did not differ significantly from in person learning in 2019.

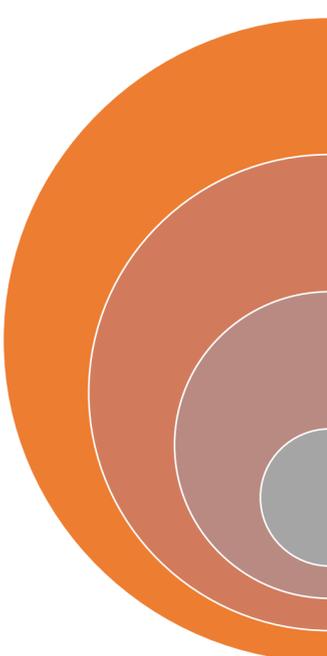
| A | Student Performance | 2019 (N=128) | 2020 (N=133) |
|---|--|-----------------|-----------------|
| | Mystery in the Forensic Lab [†] | 118/128 | 56/84** |
| | Drug Development Assignments | 95% | 97% |
| | Journal Article Presentations | 90% | 91% |

[†]Number of students that correctly determined cause of death; ^{**}Due to system error in Softchalk, responses for 49 students were not captured



*P value was <0.05 which signifies statistical difference

REFLECTIONS



It was expected that the 2020 class would perform similarly as the 2019 class, but it was unexpected for students to perform better on some assignments and assessments. However, the data supports virtual delivery methods did not hinder learning in this space.

There were students who did not perform well on specific quiz questions (e.g., Q4 and Q10), so a deeper examination will help with restructuring teaching materials and/or future planning for additional time within the course to cover those areas more in-depth.

A peer review was conducted this semester, and the senior faculty mentioned positive feedback (e.g., the instructor cares about my learning) from students that the reviewer was initially queried during a lab session. Although the sample size was quite small, this was an indication that some students appreciated the inclusive teaching practices implemented in the course.

Finally, end-of-the semester evaluations were the most positive ones I have received, so I attribute this to the inclusive teaching practices that were reviewed and discussed during the CTE Faculty Seminar.